

*Health Information on Mosquito Control***Tick and Insect Repellents****Summary**

Chemical repellents provide protection against biting insects and ticks that can transmit diseases. Various forms and concentrations of these products are available. The most effective repellents contain DEET (N,N-diethyl-m-toluamide). This chemical has been tested against a variety of biting insects and has been shown to be very effective. Some non-DEET repellent products which are intended to be applied directly to the skin also provide some protection from mosquito bites. However, studies have suggested that non-DEET products do not offer the same level of protection, or that the protection does not last as long as products containing DEET. Products containing DEET are safe when used according to directions. Because DEET is so widely used, a great deal of information is available about its safety. Over the long history of DEET use, very few confirmed incidents of toxic reactions to DEET have occurred when the product is used properly.

**Selecting an Insect Repellent**

Products containing up to about 30% DEET are considered safe for use in routine control of ticks and mosquitoes in adults and children over two months of age. According to the American Academy of Pediatrics, products containing about 15% DEET are generally sufficient to protect children in situations where concern about the spread of vector-borne disease is not particularly high. The U.S. EPA recommends that great caution be used in using DEET on children and states that products with DEET concentrations of 10% or lower are effective for children and may be preferred for most situations.

Some chemical repellents include products used to treat clothing which contain permethrin or permethrin. These products should not be used on skin. Because of the number of insect repellents available to the public, consumers should choose products carefully.

Generally, products for tick control will contain more DEET than those for mosquito control. In all cases, label instructions should be followed to ensure that a product is necessary and sufficient for your needs.

Safe Use of Insect Repellents

- Apply repellent sparingly, and only to exposed skin or clothing. One application will last four to eight hours.
- Whenever possible, wear long sleeves, pants, shoes and socks, and apply repellent to clothing instead of to skin.
- Do not apply repellents to eyelids, lips or wounded skin.
- Do not spray repellents in a confined space such as a car or tent.
- Wash treated skin with soap and water after coming indoors. Wash hands before eating.

Precautions for Special Populations

Insect repellents containing DEET have been used safely for decades by all segments of the population, and there is no evidence that using these products in accordance with product instructions carries an increased risk of adverse effects for any particular group. These tips, however, may help reduce the risk of excessive exposure and ensure that mosquitoes are adequately controlled.

Pregnant and Breastfeeding Women

- Consider non-chemical methods of mosquito avoidance, including wearing protective clothing, avoiding mosquito habitat and staying indoors during times of peak exposure.
- When using repellent, wash treated skin when protection is no longer needed.
- Consult your health care provider before using repellent products that do not contain DEET.

Children

- Because of concerns about increased skin permeability, DEET should not be applied to children under two months of age.
- Do not apply repellents to children's hands or allow them to apply repellents or to play with empty containers.
- Always store repellents out of reach of small children.

Adverse Reactions

In rare instances, skin reactions may occur. If you suspect a reaction to this product, discontinue use, wash the treated skin, and call your local poison control center. Cases of serious reactions to products containing DEET have been related to misuse of the product, such as swallowing, using over broken skin, and using for multiple days without washing skin in between use. Always follow the instructions on the product label.

If you have further questions about the use of insect repellents, contact your family physician, pharmacist, or local public health agency. Some product manufacturers provide a telephone number on the container for consumers to call for additional information.



Prepared by the Wisconsin Department of Health and Family Services,
Division of Public Health, Bureau of Environmental Health
1 West Wilson Street, Madison, Wisconsin 53701-2659,
Phone (608) 266-1120
PPH 45039 (revised 07/03)